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AUTHOR Nordstrom, Brian H.
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ABSTRACT

The chief events and personages in the history of the education of blind and deaf children are delineated, and the significant controversies surrounding them are explored. The history is apportioned into three epochs characterized by the attitudes of society toward the blind, deaf, and handicapped in general: (1) indifference or segregation; (2) pity and humanitarianism; and (3) self-reliance and social integration. Following a series of term definitions, the historical review begins with a focus on the French, Germans, and English in the 1700's and early 1800's. American pioneers are then discussed, focusing on the work of Samuel Gridley Howe and Thomas Hopkins Gallaudet. Several controversial issues are then examined, including teaching the deaf through oralism versus manualism, residential versus local schools, vocational training versus academic education, and training of teachers. An appendix contains a chronology of important events in the education of the blind and deaf. (JDD)

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THE HISTORY OF THE EDUCATION OF THE BLIND AND DEAF

by

Brian H. Nordstrom, Ed.D.

Physical Science Department
Embry-Riddle Aeronautical University
Prescott, Arizona 86301

EC 220761

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I. Introduction

The purpose of this paper is to delineate the chief events and personages in the history of the education of blind and deaf children, and to elucidate the significant controversies surrounding them. This history can be apportioned into three epochs characterized by the attitudes of society toward the blind, deaf, and handicapped in general. These three epochs represent ages of: (1) indifference or segregation; (2) pity and humanitarianism; and (3) self-reliance and social integration. The subjects of this paper receive their prominence precisely because they effected the transitions from one epoch to the next. As Cruickshank writes:

> It is fortunate that in every decade and in every culture there are a few people who are outspoken in behalf of certain causes which, when realized, constitute a real breakthrough from the plateau which had been reached (Cruickshank, 11).

Dispute is the companion of social reform. As this paper will show, the champions of the blind and deaf were often at variance over aims and methods.

Before commencing the primary discourse of this paper, it seems prudent to define certain terms related to blindness and deafness. Besides facilitating discussion, legal definitions may determine who is to receive assistance or care.

Blind and deaf children belong to that general class called the "exceptional." Cruickshank defines the exceptional child as one...

> who deviates intellectually, physically, socially or emotionally so markedly from what is considered to be normal growth and development that he cannot receive maximum benefit from a regular school program and requires a special class or supplementary instruction and services (Cruickshank, 3-4).

The term "blind" refers to vision that is less than 20/200 with correction, or whose field of vision is significantly restricted. The term "partially sighted" refers to vision in the better eye that is in the range 20/70 to 20/200 with correction (Cruickshank, 5). The partially sighted can read very large print.

Definitions relating to hearing have been provided by the 1938 Conference of the Executives of American Schools for the Deaf:

> 1. The Deaf: Those in whom the sense of hearing is non-functional for the ordinary purposes of life. This general group is made up of two distinct classes based. . .on the time of loss of hearing.

a. The congenitally deaf - those who are born deaf.
b. The adventitiously deaf - those who are born with normal hearing but in whom the sense of hearing became non-functional later through illness or accident.

2. The Hard-of-Hearing: Those in whom the sense of hearing, although defective, is functional, with or without a hearing aid (Bender, 11).

More generally, the term "deaf" may also be applied to those who either lost their hearing before speech was achieved, or who first lost their hearing, and the loss of speech soon followed. The term "hard of hearing" is then reserved for those who lost their hearing after speech was permanently established.

The terms "deaf and dumb" or "deaf-mute" may also be used in a historical sense to refer to persons who lost their hearing before speech had been achieved; hence, in appearance they were additionally "dumb" or "mute." Since the inability to speak rarely accompanies deafness, these terms are used uncommonly in modern society.

II. European Antecedents: The French, Germans, and English

In ancient times, the handicapped were often sacrificed to the welfare of the state. Imperfect infants were left to die from exposure or were killed outright (Pritchard, 2). Attitudes towards the handicapped softened during the Christian era, as exceptional persons came to be viewed as the responsibility of the Church. Asylums for the blind, or hospices, were established during the early Middle Ages. History records scattered attempts during this period to educate individual blind or deaf persons, but the years 1200-1700 are distinguished mostly by charitable efforts motivated by pity or humanitarian concerns. Space prohibites the enumeration of these occurrences here, but a chronology of events from early times to the present is provided as an appendix to this paper.

It would be difficult--perhaps even unjust--to name any one individual the "first" modern educator of the blind or deaf. However, certain European "pioneers" of the eighteenth century distinguished themselves in their contemporary societies for being called "great." These men were Jacob Rodriguez Pereira, Charles Michel (Abbe de l'Epee), Samuel Heinicke, Thomas Braidwood, and Valentin Hauy.

Jacob Rodriguez Pereira (1715-1780) was born in Portugal, but spent his educational career in France, where he achieved prominence for his success in teaching speech to the deaf (Pritchard, 6). Because Hippocrates and Aristotle had both taught that persons who are deaf from birth are also dumb (Heck, 232), centuries passed with also no attempts being made to teach speech to the deaf. Pereira has been called "the greatest teacher of them all" (Bender, 65) for demonstrating that the deaf could in fact be taught to communicate, both by manual methods and by speech.

Early attempts to educate the blind and deaf were usually made by tutors to the children of the wealthy. The honor for being the first person to educate the deaf out of purely humanitarian interests belongs to Charles Michel, Abbe de l'Epee (1712-1789). In 1760, in Paris, France, de l'Epee founded the Institution Nationale des Sourds-Muets (The National Institution for Deaf-Mutes) as the first public school in the world for the education of the deaf (Pritchard, 6-7). Bender states:

> Of all the names that are prominant in the history of the education of the deaf, one of the best-known in all recent times and in all countries is that of the Abbe de l'Epee. For it was he who first made the education of the deaf a matter of public concern. It was he who first made such education available to the poor (Bender, 71).

De l'Epee freely published his methods. It should be noted, however, that de l'Epee used manual signs, and did not teach speech. French schools of the eighteenth and nineteenth century followed his model, and the manual system of instructing the deaf came to be called the "French method."

Samuel Heinicke (1727-1790) established the first German school for educating the deaf. Heinicke is called the "Father of the oral method of instruction" as he taught speech rather than manual signs (Heck, 234). A conflict between de l'Epee and Heinicke ultimately arose over which method was the better of the two.

England tended to vacillate between the oral method and the manual method. In 1766, Thomas Braidwood (1715-1806) founded the Academy for the Deaf and Dumb in Edinburgh, Scotland, which was the first English school for the deaf (Pritchard, 11-21). Braidwood used a small, spatula-like instrument to place the tongue in the correct position for speech. He would start with articulation, combining speech elements into words. Reading and writing would follow. As was common among these early teachers as a means of protecting their own livelihoods, Braidwood kept his methods a secret during his lifetime. (As will be shown later, his secrecy had profound consequences on the subsequent development of education for the deaf in the United States.) Braidwood's methods were finally published by the family after his death.

Valentin Hauy (1745-1822) was sufficiently impressed by the work with the deaf of his countryman, the Abbe de l'Epee, that Hauy opened L'Institution Nationale des Jeunes Aveugles (The National Institution for the Young Blind) in Paris in 1784 (Bonner, 14-16). Hauy's school was the first charity school for the blind, funded by the Philanthropic Society (Pritchard, 3; Heck, 158). Hauy's ability to start his school should not be interpreted as merely an event "whose time had come." Lowenfeld states that Hauy's school

> ... was the result of changes in living conditions of the blind and in societal attitudes toward them

which occurred and developed over hundreds, and indeed, thousands of years (Lowenfeld, 1).

In 1786 Hauy published Essai sur l'Education des Aveugles ("Essay on the Education of the Blind"), in which he freely discussed his methods of teaching writing, arithmetic, geography, music and handicrafts for occupational purposes, endeavoring to make the education of blind children similar to that of sighted children (Lowenfeld, 1).

The most famous pupil of Hauy's school was undoubtedly Louis Braille (1809-1852). Hauy had experimented with the use of embossed print for the blind to read (Farrell, 19), but Roman letters are not sufficiently distinct to the touch. In 1829, Braille, who was blind himself, introduced a system of raised dots that represented the letters of the alphabet. These dots had the advantage of being easier to feel, of taking little space, and, with the aid of a stylus, of being easy and quick to write. (Pritchard, 46-50, 159). Although Braille's system was not adopted in France until after his death--or in other countries until even later--once braille books began to appear, it was used, and is still used, universally.

Using the schools that have been mentioned here for models, other schools for the blind and deaf emerged throughout Europe. By 1850, probably no European country lacked such schools.

III. The American Pioneers: Howe and Gallaudet

"It can be said that no other man in the field of education has contributed so much and so widely as Samuel Gridley Howe" (Lowenfeld, 8). When the Massachusetts State Legislature in 1829 voted to incorporate The New England Asylum for the Blind, Samuel Gridley Howe (1801-1876) was selected as the first superintendent (Heck, 159-160). The New England Asylum opened its doors in 1832, and was soon renamed the Perkins Institution for the Blind because of the generous donation by Colonel Thomas H. Perkins of his mansion and gardens for quarters for the school. Gabriel Farrell, who later headed the Perkins Institution himself, relates that Howe travelled through Europe to learn how the blind were being educated there. Fired with enthusiasm, Howe returned to the United States and plunged into providing the finest education for blind children the world had ever witnessed (Farrell, 32-53).

Two fundamental aspects of Howe's work made the Perkins School the model for all subsequent American institutions. First was Howe's dynamism. Schwartz states that Howe "... demonstrated that a learned blind man need not be considered an extraordinary phenomenon, and that a common-school education was within the grasp of all so handicapped" (Schwartz, 48-49). Howe's credo that blind children should not suffer from lack of self-esteem, or from a feeling of misfortune convicted him of the desirability of creating independence and self-reliance among his pupils (Bonner, 23-25). Samuel Howe was a social reformer on behalf of numerous causes: a close friend of Horace Mann, Howe supported and received support from the common-school movement; he crusaded on behalf of the insane; he championed abolititonists; he preached prison reform. Howe's wife, Julia, achieved fame also for composing

"The Battle Hymn of the Republic" when the Howes surveyed sanitary conditions among Union troops in the field (Farrell, 48-49). Paladin of outcasts and unfortunates, Howe struggled for full integration of the blind into society.

Second, Howe's indefatigable idealism inspired him to attempt the education of a deaf-blind person. Before Howe, no person who was both deaf and blind had ever been taught successfully. Individuals who were both deaf and blind--and often, therefore, mute--were generally considered to be idiots. The British jurist, Sir William Blackstone, had said that they were "incapable of any understanding, as wanting all those senses which furnish the human mind with ideas" (qtd. Schwartz, 67-68). Undeterred, Howe adopted under his tutelage a young girl named Laura Bridgman who was deaf, blind, and mute. Howe's triumph with Laura was related by Charles Dickens, who visited the Perkins Institution in 1842, and in The American Notes, described Laura's education. (Farrell, 80-82).

Laura Bridgman resided at the Perkins Institution the remainder of her life. As a pupil at Perkins, Anne Sullivan (1866-1930), herself blind, lived with Miss Bridgman, learned the Perkins' methods for teaching language to the deaf-blind, and remained as a teacher (Lowenfeld, 7-9). In Tuscumbia, Alabama, Helen Keller's mother read Dickens' book and requested that the Perkins Institution send a teacher for Helen to Tuscumbia. Miss Sullivan responded, and the story of Helen Keller has come to represent the ultimate achievement in the education of a handicapped person. The story of Anne Sullivan and Helen Keller has been recorded fully by Miss Keller herself and by their biographers (Keller; Lash), and will not be told again here. From 1837 on, however, Howe and the Perkins Institution were noted for their work with "the children of the silent night" (Farrell, 84).

In 1815, a survey recorded 80 deaf children living in Connecticut, 400 in New England, and 2000 in the United States. Dr. Mason Fitch Cogswell, whose daughter, Alice, was deaf, proposed that a school for the deaf be established in Hartford. Subscriptions were raised for its endowment and Thomas Hopkins Gallaudet (1787-1851), Cogswell's neighbor, was selected as its first superintendent. Gallaudet travelled to England to study under Thomas Braidwood. As previously mentioned, however, Braidwood kept his methods a secret and refused to cooperate with Gallaudet. Undaunted, Gallaudet crossed the Channel to study under the Abbe Sicard, disciple of the Abbe de l'Epee. Thus, the manual method of instruction came to America rather than the oral method (Bender, 117-122).

Upon Gallaudet's return in 1817, the American Asylum for the Deaf opened in Hartford with monies from both the state legislature and private donations, making the institution the first charitable institution in the United States to receive public support. Alice Cogswell was enrolled as the first pupil, and the school persists today as the American School for the Deaf. Gallaudet's legacy is further perpetuated in Gallaudet University in Washington, D.C., the world's only institution of higher learning for the deaf (Bailey).

IV. How Should the Deaf Be Taught? Oralism Vs Manualism

It has been mentioned already that the ancient Greeks taught that the deaf cannot speak. As Bender states, "Language and speech were considered to be instinctive rather than acquired. So it appeared ridiculous to try to teach language where it did not exist naturally" (Bender, 20). To quote Aristotle, "The ear is the organ of education" (Burnes, 7). To quote Lucretius, "To instruct the deaf no art could ever reach, No care improve them and no wisdom teach" (Burnes, 7). The problem, however, stems from hearing being the normal route to learning to speak, so that lack of hearing at an early age is necessarily accompanied by lack of speech (Bender, 12). The understanding of deafness has been punctuated by severe controversy over whether to teach the deaf to communicate by manual signs or by oral speech. This section will trace the history of that controversy.

The invention of the printing press by Johann Gutenberg in 1438 placed the written word into the hands of the deaf really for the first time (Bender, 29). In subsequent years, accounts were given of deaf-mutes learning to read and understand. In a sense, they could "hear" by reading and "speak" by writing. Insightful benefactors began to acknowledge the fiction of Aristotle's teachings.

One of the earliest records of deaf-mutes acquiring oral speech is that of Peter of Ponce (1520-1584), who wrote:

> . . .I have had pupils who were deaf and dumb from birth,... whom I have taught to speak, to read, to write, and to keep accounts, to repeat prayers, to serve the Mass, to know the doctrines of Christian religion, and to confess themselves with the living voice (qtd. in Bender, 37).

In 1644, however, the Englishman John Bulwer taught that the "language of the hand" was the language most natural to all people. Bulwer created interest in manual methods of communication. The middle seventeenth century witnessed an open debate between oralist William Holder and manualist John Wallis, both of England. Using a tongue-shaped leather thong to position the tongue, Holder taught individual sounds, then syllables, and finally words. Wallis countered that speech is not worth the effort, but emphasized reading, writing, and a manual alphabet (Bender, 49-57).

After a century of experimentation with both methods, it appeared that oralism would prevail. Johann Konrad Amman (1669-1724) of Switzerland and Pereira of France both taught oral language and were extremely influential during their lifetimes (Bender, 60-68). In France however, oralism died with de l'Epee, whose success with manual signs caused France to discontinue teaching speech altogether (Pritchard, 82). (As was already mentioned, fate dictated that Gallaudet would bring the French method to the United States.) Gratefully, oralism was not dead totally, as Heinicke of Germany developed the oral method to its fullest in Europe (Heck, 234), teaching that "Klares Denken ist dur in der Llautsprache moglich" (qtd. in Pritchard, 8; "Precision of

thought is only possible where there is speech.") Heinicke utilized strictly oral methods. He taught full words first, since he believed that to be the manner in which hearing people learn speech, letters or isolated syllables alone having no meaning (Bender, 102).

Under Braidwood, oralism prevailed in England. However, because of Braidwood's refusal to reveal his methods, oralism declined. Eventually, even the sign and manual system declined, as pupils invented their own signs and the teachers copied them. In general, educators either copied the French system of manual signs or the German system of oral speech (Pritchard, 11-42).

Why was there a controversy? If speech is more difficult, why teach speech to the deaf? The three epochs defined at the beginning of this paper present an excellent paradigm of the origin and eventual resolution of this debate. During the first epoch, when the deaf were segregated from society, there was no exigency for communication. During the second epoch, when the deaf were only minimally educated, the deaf needed only to communicate among themselves, a function for which manual signs suffices. But, in the third, and present, epoch, full social integration with hearing people compels speech. Howe recognized this, and so did Alexander Graham Bell (1847-1922), both of whose efforts beheld their fruition in oral schools for the deaf in the United States (Bender, 141-150). After the Gallaudet School finally adopted oralism, the teaching of speech spread throughout this country. Finally, as deaf children began to be integrated into day schools with hearing children, oralism was mandated (Cruickshank, 57).

Aristotle had lost. In 1853, Professor Samuel Porter published an exposition on educational developments in Europe in which he wrote:

> (Instruction) had demonstrated the fact that the deaf and dumb are naturally equal to other persons in their intellectual faculties, and that by appropriate methods early applied, and wisely and perseveringly pursued, they can be educated (qtd. in Burnes, 11-12).

The contemporary posture is articulated by Avery:

1. Deaf children can learn to understand language through use of all the senses.
2. They can comprehend language through lipreading and reading (plus use of any residual hearing).
3. They can express themselves through speech and writing.
4. They can learn academic subject matter (Avery, 357).

The use of residual hearing should be stressed. The prevention of severe childhood diseases has decreased the incidence of deafness in children, and the widespread use of hearing aids has accomodated a great many who are simply hard-of-hearing, not totally deaf. Thus, the acquisition of language has become almost entirely universal.

V. Where Should the Blind and Deaf Be Educated? Residential Vs Local Schools

The education of blind and deaf children originated with private tutors hired by their wealthy parents (Burnes, 9). Before 1800, there were few enough schools for ordinary children that a school for handicapped children was considered quite extraordinary (Prithcard, 1). However, coincident with the common-school movement emerged awareness of the unique requirements of the blind and deaf. Residential schools were the only solution for the times because public schools were incapable of meeting those requirements: their staffs lacked training in special education; the schools themselves were unsafe environments for children with limited mobility; there were too few blind or deaf children in any one community for an individual community to provide the requisite resources and materials. In addition, the homes whence the children came were often unsanitary and unsafe, and parents tended to neglect them or to encourage dependence on others rather than self-reliance. Thus, boarding schools were actually superior for the children, providing them with graded instruction, better trade and industrial training, better physical education and medical care, and access to expensive special equipment (Heck, 166-167).

Early in the history of the education of blind and deaf children in this country, however, a few prescient leaders recognized that residential schools were not the ultimate response. Cruickshank states:

> Although the development of the residential school marks an important step, there ultimately resulted a state of lethargy toward it...It is easy to build an institution and to place it miles away.... Once it was completed, children could be sent there. The children were being cared for. At that point the conscience of society often ceased functioning. Society's guilt feeling was assuaged. Society had met its obligations. The handicapped could be forgotten. (Cruickshank, 11-12).

More importantly, educational leaders empathized with the need for young children to remain at home with parents and siblings, and to associate with sighted children. Because Samuel Howe and Horace Mann were close friends, and because Mann advocated the right of all children to a free public education, Howe began to advocate that right for blind children also (Farrell, 75). As public school themselves improved and teacher training included provision for special education, Howe could say:

> ... where the charms and refining influences of the true family relation cannot be had, all such institutions are unnatural, undesirable, and very liable to abuse. We should have as few of them as is possible (qtd. in Farrell, 61).

As the controversy evolved over residential care versus day care,

persuasions for both postures emerged. Boarding school proponents had sound arguments: the residential schools were often superior in educational standards, equipment, quality of instruction, and caliber of teachers; workshops were often connected to schools for the blind, so that pupils could remain and be cared for as adults (Farrell, 34, 67); there are children so severely handicapped that they can only be served in a residential setting (Cruickshank, 60-61); it usually took extra years for a blind or deaf child to complete elementary school, and residential schools provided a more individually-paced setting; in the nineteenth century there were insufficient local numbers to justify public school classes; schools for the blind often employed blind teachers, and some persons argued that the blind can best teach the blind (Heck, 166-182, 252). Even today, contemporary proponents of residential schools cite the broad range of expertise and experience in the residential schools. It is argued that these schools should continue to provide innovative and dynamic leadership, to be centers for research and demonstration, and to train student interns (Miller). Furthermore, residential schools may be best suited to meet the special needs of the multiply handicapped, to provide diagnostic and assessment services, to lend materials and equipment, to prepare the handicapped for college, and to foster short-term and adult education programs (McIntire).

Had public schools been less successful and popular with the public, residential care most likely would still be the prevalent mode of education. By 1900, however, public schools were sufficiently improved and teacher training for the handicapped had adequately progressed that integration of deaf and blind children into the public schools had begun, although integration of blind children lagged considerably behind that of deaf children. Local school proponents had their sound arguments also: institutionalization can lead to dependence on the school (Lowenfeld, 168); since it had been demonstrated that the blind and deaf could be educated, full integration would optimally be achieved by incorporating the children into schools with sighted and hearing children (Lowenfeld, 14-15); parents were becoming more informed about caring for their children and home life had improved; schools could afford to provide braille classes and other special classes for the handicapped; regular classroom teachers were better prepared to have blind or deaf pupils in their classrooms; resource rooms and itinerant teachers (who travelled from school to school, or to the home) became common (Cruickshank, 18-19, 68-69); federal monies are available for special equipment and programs (Bender, 170-171); integration with sighted and hearing pupils helps those children appreciate the abilities of blind and deaf children, so that they will be more acceptable of them in adult life and work. (Lowenfeld, 167-168).

Boarding schools for the deaf have largely disappeared. Today, a compehensive state program for the blind incorporates both residential state schools and local day schools. Modern residential schools tend to be less institutionalized, with "cottage-style" living replacing dormitories. High school students attend some classes and activities at the local public schools. (Farrell,59-64). All children participate to some extent with sighted children in the community.

VI. What Should the Blind and Deaf Be Taught? Vocational Training Vs. Academic Education

. Once more, the paradigm of the three epochs illustrates the changes in the type of education the blind and deaf have received. Farrell points out that "Most of the early asylums for the blind were merely attempts to take the itinerant sightless off the streets, and little was done toward training them for integration with or living among the seeing" (Farrell, 148). By the nineteenth century, the emphasis had shifted to education for self-sufficiency. By the mid-twentieth century, the priority had become equal opportunity in the professions.

In the early institutions, it was assumed that the blind could perform only limited tasks, and therefore were trained in vocations like spinning, weaving, sewing, basketry, chair-caning, bookbinding, and printing (Lowenfeld, 1-6). Blind singers, musicians, and church organists were also common (Pritchard, 19). At the Perkins Institution, Howe emphasized handicrafts, music, writing, arithmetic, geography (using embossed maps), French, higher mathematics, natural philosophy, mechanical crafts, and Scripture lessons (Schwartz,54-57). The blind could generally become self-sufficient, yet many remained as residents of the schools as teachers or as employees of associated work shops rather than returning to the society of the sighted. Integration was difficult because employers were generally reluctant to hire the blind.

Although it was easier for the deaf to return to society, the first century and a half of their schooling concentrated on vocational training also. In the elementary grades, deaf children did receive a comprehensive education in subjects like arithmetic, geography, history, reading, and writing. Beyond that, the intent was industrial training for self-sufficiency (Heck, 178). The early twentieth century witnessed mainstreaming of deaf or hard-of-hearing children into public school classrooms, where they could be instructed in the regular public school curriculum (Heck, 255).

The acceptance of the braille system in Europe and in America marked a pivotal event for the blind. Books became available to the blind in greater numbers than ever before, and with them the attendant learning (Bonner, 16-20). Of course, for many years, instruction was hampered by the lack of textbooks (Pritchard, 23). Modern technology has solved some of the problems with increasingly more sophisticated developments: the phonograph, the tape recorder, and now the computer.

Today, the goal of special education is to provide handicapped children with the same educational opportunities they would have if they were not handicapped. Society--whether by law or by social consensus--affirms the right of any blind or deaf person to a high school education, a college education, and the chance of entry into the professions. In this respect, Gallaudet University probably represents one of the finest opportunities for higher education available to the handicapped. For the past two decades educators have also focused on adult education. A recent assessment of the goals of deaf adults

revealed the following as priorities:

1. Improvement of language skills;
2. Better management of home, property and money;
3. Increased income through better jobs;
4. Reduction of unemployment;
5. Improvement of family life;
6. Preparation for retirement;
7. Safe and healthful living;
8. Attainment of a high school diploma;
9. Desire for continuous learning, enjoyment of culture and the arts (Costello).

A past barrier to higher education in science and engineering for the blind has been the obstacle of laboratory work. Technological advances have allowed blind students entry into laboratory situations hitherto believed impossible:

> Experiments in a lab--and most equipment and procedures used--are designed for students with full eyesight. Weighing or measuring solids or liquids, monitoring indicator color changes or formation of precipitates, observing temperature changes, or even heating a beaker with a bunsen burner appear to exceed the capabilities of a student without sight (Seltzer).

Examples of laboratory equipment now available include:

1. Voltmeters with audible readout;
2. Liquid-level indicators;
3. Electronic calculators with braille printout;
4. X/Y plotters with braille printout;
5. Talking thermometers;
6. Talking calculators;
7. Light probes (used as part of readout devices--tones are emitted which increase in pitch proportionally to changes in light intensity);
8. Braille labelers;
9. Talking computer terminals (Reese, 15).

In addition, speech synthesizers and compressors are now available which electronically convert pages of text into voice output (Mack).

It does not require a great deal of imagination to conceive of some type of glasses or goggles for the blind that can electronically analyze their surroundings and communicate images to the wearer of objects and movements in his immediate vicinity. Nor does it require much imagination to conceive of cornea or retina transplants being perfected to the point that blindness or impaired vision join smallpox in the annuals of the past. Modern medical practices already have lowered the incidence or severity of most childhood diseases that historically caused blindness. Perhaps future medical and technological achievements will eradicate blindness entirely.

VII. How Should the Partially Sighted Be Educated?

During the first half of the twentieth century, a controversy emerged over the education of children who were partially sighted. The prevalent attitude around the turn of the century was that the partially sighted should be taught braille to conserve their remaining eyesight (Lowenfeld, 21-22). Thus, the first attempt at education was to place partially sighted children in schools for the totally blind so that they would receive braille instruction. This course of action was found to be unsuccessful because partially sighted children merely learned to read braille with their eyes, so that they neither learned to read print nor to read braille with their fingers (Lowenfeld, 16-17).

When partially sighted children were removed from schools for the blind, they were placed in public schools, but segregated into separate sight-saving classrooms. As late as 1940, Heck wrote:

> A blind child is handicapped all through life, despite the best educational program that can be provided for him. This fact makes it important to preserve all the eyesight that a given child may possess....To preserve all existing sight for these youth is the chief aim of the sight-saving class... Continued attempts to use regular texts would undoubtedly weaken the little vision they already possess (Heck, 188-189).

Part of the instruction partially sighted children received was in the area of good hygiene, so that they would learn to take care of their eyes and conserve their remaining eyesight.

Eventually, ophthalmologists came to believe that sight conservation was unnecessary, and partially sighted children were mainstreamed into classes with sighted children. By this time--the mid-1900's--educational practices had changed for the benefit of sighted students as well. Light painted walls, better lighting, light furniture, green chalkboards, and similar modifications for all students have permitted partially sighted students to function in regular classrooms (Cruickshank, 309-310). When necessary, eyeglasses, large print books, or magnifiers enable partially sighted pupils to read and do their school work.

VIII. How Have the Teachers of the Blind and Deaf Received Their Training?

The earliest teachers of the blind and deaf were self-trained in their methods. To protect their own livelihoods, they often kept their methods a secret. Because of poor communication among nations, early teachers were often unaware of the work and successes of others. As a result, progress languished (Bender, 59). Only in the late eighteenth century did formal training commence. The purpose of teacher training is to share successful methods and improve the quality of instruction.

In general, teacher training in special education--and in general education as well--was begun by individual concern, gained momentum as others realized its benefits, and finally became fixed by institutional custom, or, in recent years, by law.

Valentin Hauy trained teachers at his school on an apprenticeship basis. In the United States, schools like the Perkins Institution used apprenticeship to train teachers until the need became too great (Lowenfeld, 342). Commonly, teachers were themselves blind or deaf graduates of the institutions at which they taught. One of the first university-level teacher training programs to be established was the Horace Rackham School of Special Education at Eastern Michigan University in the early 1900's. Programs included training in the education of the deaf, the hard-of-hearing, the blind, the mentally retarded, the crippled, and children with special health problems. Other teacher training programs followed at Teacher's College, Columbia University; Wayne State University, Detroit, Michigan; Normal University, Illinois; and Milwaukee State Teachers College, Wisconsin. Most early instruction was based on the methods and techniques of experienced teachers drawn from nearby residential schools, since there existed no real body of knowledge or common research (Cruikshank, 24). In 1918, the University of California at Berkeley added a teacher preparation course, and in 1921, Harvard started one. By the 1930's, numerous universities around the United States were providing teacher training in special education (Lowenfeld, 343; Bonner, 32).

Teacher preparation programs include the same broad background in the arts and sciences that regular teachers receive, since teachers of the blind and deaf teach the same subjects that regular teachers teach. Teacher preparation programs also include the same professional education as for regular teachers, ideally including a practicum with normal children first. Then, teacher candidates receive specialized training in the nature and needs of blind, visually impaired, or hard-of-hearing children, an introduction to special methods of instruction, and a practicum experience with special children (Cruickshank, 314).

The 1960's witnessed even greater efforts to improve training for teachers in special education. Passage of compulsory education laws had resulted in huge increases in school enrollments of handicapped children (Lowenfeld, 344). The social climate of the 1960's advocated rights for everyone, including the handicapped, which would require better teacher preparation. In 1961, federal legislation was passed to promote teacher education programs (Bender, 168-169). In 1966, the Council for Exceptional Children adopted a set of standards for the preparation of teachers of the blind. These included:

1. The influence on children of visual impairments.
2. The educational implications of eye conditions.
3. Teaching of communication skills.
4. Orientation, mobility, and daily living skills (Lowenfeld, 349).

The decade closed with the passage of the Handicapped Children's Early

Education Assistance Act in 1969, which provides for early identification of children with disabilities and pre-school programs to work with them. Finally, 1975 saw the passage of the Education of All Handicapped Children Act, which promotes "mainstreaming" of handicapped children, i.e., their placement into settings that provide the "least restricted environment" (Bender, 171).

There still exists some dispute whether sighted people can adequately empathize with the blind and hearing people can adequately empathize with the hard-of-hearing. Heck states, "There may be some justice to the claim that the blind can best teach the blind" (Heck, 182). Jensema recently published a study of the characteristics of teachers of the deaf who are themselves hearing impaired. He found that they tend to be employed in residential rather than day schools, that they remain longer in the profession than hearing teachers do, and that they stay longer in a specific position. This is a controversy that probably exists only in the minds of those who which to create controversy. Certainly, the effectiveness of blind or hard of hearing persons as teachers is testimony to the skills and talents the handicapped possess. We should be thankful that many of the past barriers to their educational achievement have been removed.

Perhaps the greatest necessity at this time is for the training of nonwhite teachers. Moores and Oden point to the glaring lack of Black professionals among educators of the deaf. They assert that the needs of Black deaf children are not being met, and that it is still common for Black deaf children to be classified as mentally retarded. Cruickshank states, "In a sense, the history of the United States is the history of the education of exceptional children and youth" (Cruickshank, 11). Certainly, the history of teacher preparation has paralleled the history of social concerns in the United States as a whole.

IX. Conclusion

Three general epochs have demarcated the history of education of the blind and deaf: (1) segregation; (2) humanitarianism; and (3) social integration. We have surveyed the significant events, persons, and controversies which distinguished each epoch and which effected the transitions between epochs. We have examined, also, the benefits obtained for blind and deaf children by parallel developments in the history of public education in general.

Visually handicapped and hearing-impaired children continue to benefit from medical advancements, early diagnosis of physical disabilities, increased social awareness and acceptance, legislation, and technological advancements. Immunization against childhood diseases has effectively reduced the incidence of blindness and deafness, and hearing defects are identified in early infancy so that compensatory programs can begin (Bender, 172-174). Gallaudet University operates model elementary and secondary schools for the deaf ("Birth of a School," Gallaudet Today). In 1971, the Pennsylvania Association for Retarded Citizens filed suit and won the right of the mentally

retarded to attend public schools. In 1975, the case Mills versus the District of Columbia Board of Education extended the previous decision to include all handicapped children (McIntire). Hearing aids are more compact and more effective. Computers open avenues of learning and interaction for the blind that were previously unrealized (Journal of Visual Impairment and Blindness).

Of course, there is still room for improvement. Prickett and Hunt report that the education of the deaf is still unsuccessful in several areas. There needs to be an expansion of interpreting services, more work on family life and sex education, and improved career education. The blind still require greater access to opportunities in higher education and the professions (McIntire). Regardless of pessimism, however, it is certainly true that greater numbers of blind, visually handicapped, deaf and hearing-impaired children are receiving medical assistance and are being educated than have ever before. As the incidence of blindness and deafness declines, the prophecy of Isaiah may yet come to pass: "In that day the deaf shall hear the words of a book, and out of their gloom and darkness the eyes of the blind shall see" (Isaiah 29:18).

Appendix: Chronology of Important Events in the Education of the Blind and Deaf

300 - 500 First hospices established as shelters for the blind.

1254 - Louis IX (France): founded Hospice Nationale des Quinze-Vingts (for soldiers blinded in the Crusades).

1329 - First English hospice for blind men.

1438 - Gutenberg invents the printing press. Greater access to books will permit the deaf to learn to read.

1443 - 1485 Rodolphus Agricola is first recorded deaf-mute who learns how to read and write.

1501 - 1576 Geronimo Cardano de Milan: espouses principle that the deaf may be taught to associate ideas with written words.

1520 - 1584 Peter de Ponce: opens school for deaf-mutes at monastery of San Salvador. Teaches lip-reading.

1620 - Juan Paulo Bonet: 1st textbook on how to instruct the deaf. Concentrates on the use of manual signs.

1644 - John Bulwer (England): creates interest in developing manual methods of communication among the deaf.

1650's - William Holder and John Wallis (England) both claim to be first to teach the deaf successfully.

1669 - 1724 Johann Konrad Amman (Switzerland): teaches deaf-mutes to speak.

1680 - George Dalgarno (Aberdeen, Scotland): publishes <u>The Deaf and Dumb Man's Tutor</u>. Promotes writing and a manual alphabet.

1715 - 1780 Jacob Rodriguez Pereira (b. Portugal, lived in France): teaches manual methods and speech.

1745 - Foundling Hospital opens in London to care for physically handicapped infants deserted as foundlings.

1760 - Charles Michel, Abbe de l'Epee: founded Institution Nationale des Sourds-Muets (Paris). First public school in the world for the education of the deaf.

1760 - Samuel Heinicke: founded school for the deaf near Hamburg, Germany.

1766 - Thomas Braidwood: founded Academy for the Deaf and Dumb (Edinburgh).

1778 - Heinicke moves his school to Leipzig. First school for the deaf to be recognized and receive support from the state.

1779 - Abbe Stork - establishes 1st state school for the deaf (Vienna)

1784 - Valentin Hauy: founded Institution Nationale des Jeunes Aveugles (Paris)

1791 - The School of Instruction for the Indigent Blind founded. 1st public institution for the blind in England. (Name was later changed to Asylum for the Indigent Blind. Name was again changed in 1800 to School of Industry for the Blind.)

1792 - Thomas Braidwood: first director, Asylum for the Support and Education of the Deaf and Dumb Children of the Poor founded (London). 1st public school for the deaf in England.

1795 - Lorenzo Hervas y Panduro: publishes Spanish School for Deaf-Mutes, or the Art of Teaching to Write and Speak the Spanish Language.

1799 - School for the Indigent Blind founded (London).

1800 - 1st school for the deaf founded to be financed by the government (Denmark).

1804 - Johann Wilhelm Klein: founded Imperial School for the Education of Blind Children (Vienna).

1805 - 1874 Frederick Moritz Hill: recognized as greatest educator of the deaf of his era. Continues to develop Heinicke's "German system" of teaching speech to the deaf.

1805 - Thomas Tawell: founded The Asylum and School for the Indigent Blind (England).

1812 - General Institution for the Instruction of Deaf and Dumb Children founded (Birmingham). First director, Thomas Braidwood (grandson of first Thomas Braidwood).

1817 - Thomas Hopkins Gallaudet: named first superintendent of the first public school for the deaf in the United States (Hartford, Connecticut).

1818 - Rev. John Stanford: founded New York Institution for the Deaf and Dumb.

1819 - Klein publishes 1st extensive textbook on methods for instructing the blind.

1819 - Arrowsmith publishes The Art of Instructing the Infant Deaf and Dumb.

1823 - First state school for the deaf, Kentucky.

1829 - Louis Braille: Introduces system of raised dots by which the blind can read.

1832 - New England Asylum for the Blind opens. First director, Dr. Samuel Gridley Howe. Later renamed the Perkins Institution for the Blind.

1832 - New York School for the Blind founded. First director, Dr. John D. Ross.

1833 - Pennsylvania Institution for the Instruction of the Blind opens in Philadelphia. First director, Julius R. Friedlander.

1837 - The Ohio School for the blind opens, first state school for the blind that is supported entirely by state funds.

1838 - School established by the London Society for Teaching the Blind to Read.

1840's - Institution for the Blind and the Deaf and Dumb (Bath). First institution for the multiply handicapped.

1841 - Catholic Blind Asylum founded in Liverpool. 1st institution founded by a religious organization.

1856 - Amos Kendall and Miner Gallaudet: founded Kendall School (Washington, D.C.) for education of the deaf.

1860 - The braille system introduced in the United States.

1864 - Kendall School renamed Columbia Institution. Only institution of higher learning for the deaf in the world.

1866 - Anne Sullivan born.

1868 - 1st blind child accepted in a regular public school (Scotland).

1869 - Horace Mann School for the Deaf founded. First city school in the United States.

1872 - English schools adopt the braille system.

1872 - Dr. Francis Campbell: founded Royal Normal College for the Blind (London).

1872 - Alexander Graham Bell: opens training school for teachers of the deaf (Boston).

1880 - Anne Sullivan admitted to Perkins Institution.

1880 - Helen Keller born.

1890 - Alexander Graham Bell: Instrumental in founding the American Association for Teaching Speech to the Deaf.

1893 - Cleveland Day School for Deaf Children opens. First day school for the deaf in the United States.

1894 - Kendall School renamed Gallaudet College.

c. 1900 - Classes for partially sighted children start in England and Germany.

1900 - First class for blind children in a regular public school, Chicago.

1901 - National Education Association meeting: the Department of the Deaf and Dumb, Blind, and Feeble-minded renames itself the Department of Special Education.

1909 - New York City establishes 1st public city school for the education of the blind.

1909 - Cleveland admits 1st blind children to public school classes with sighted children.

1914 - Max A. Goldstein: establishes the Central Institute for the Deaf (St. Louis, Missouri).

1917 - Los Angeles establishes 1st braille class in a public school.

1900 - 1925 First university-based teacher preparation courses offered at Eastern Michigan University, Columbia University, Wayne State University, University of California at Berkeley, Harvard University.

1920 - U.S. Census shows 497 blind persons per million population.

1923 - Cleveland Day School renamed Alexander Graham Bell School.

1926 - Bell Telephone Laboratories invents audiometer for early detection of hearing loss.

1930 - Anne Sullivan dies.

1930 - White House Conference. Committee on special education estimates 13,521,400 handicapped children in the United States, including 64,400 blind or partially sighted, and 3,000,000 hard-of-hearing.

1931 - The Central Institute for the Deaf (St. Louis) begins teacher training program.

1932 - Braille finally adopted and codified in the United States.

1958 - Legislation passes requiring captioned films for the hard-of-hearing.

1960's - Legislation passes providing federal support for teacher training, research, educational grants, purchase of instructional material, and innovative programs.

1965 - Passage of the Elementary and Secondary Education Act.

1968 - Helen Keller dies.

1969 - Passage of the Handicapped Children's Early Education Assistance Act.

1970 - Model secondary school for the deaf opens at Gallaudet College.

1971 - Kendall Demonstration Elementary School opens at Gallaudet College.

1975 - Passage of the Education of All Handicapped Children Act.

1986 - Gallaudet College becomes a University.

List of Works Cited

Avery, C.B., "The Education of Children with Impaired Hearing," in Cruickshank, W.M., and Johnson, G.O., ed., Education of Exceptional Children and Youth, 2nd ed. (Englewood Cliffs: Prentice-Hall), 1967, pp. 343-388.

Bailey, A.L., "Gallaudet, Now a University," The Chronicle of Higher Education, October 29, 1986, p. 31.

Bender, R. E., The Conquest of Deafness, 3rd ed. (Danville, IL: The Interstate Printers and Publishers, Inc.), 1981.

--- "Birth of a School," Gallaudet Today,1 (1), Summer, 1970.

Bonner, R. E. and Lovett, M. E., The Visually Limited Child (New York: MSS Educational Publishing Co.), 1970.

Burnes, B. B., "History of the Education of the Deaf to 1815," in A Handbook of Readings in Education of the Deaf and Postschool Implications, Fusfeld, I. S., ed. (Springfield: Charles C. Thomas), 1967.

Costello, E., "Continuing Education for Deaf Adults: A National Needs Assessment," American Annuals of the Deaf, 122 (1), 1977.

Cruickshank, W. M., "The Development of Education for Exceptional Children," in Cruickshank, W. M. and Johnson, G. O., ed, Education of Exceptional Children and Youth, 2nd ed. (Englewood Cliffs: Prentice-Hall), 1967, pp. 3-44.

Cruickshank, W. M., "Current Educational Practices with Exceptional Children," in Cruickshank and Johnson., ibid, pp. 45-98.

Farrell, Gabriel, The Story of Blindness (Cambridge: Harvard University Press), 1956.

--- Gallaudet Today, 2 (1), Fall, 1971, p. 16.

Heck, A. O., The Education of Exceptional Children (New York:McGraw-Hill), 1940.

Jensema, C. "Three Characteristics of Teachers of the Deaf Who Are Hearing Impaired," American Annuals of the Deaf, 122 (3), 1977.

Journal of Visual Impairment and Blindness, 78 (9), 1984, issue devoted to utilization of microcomputers.

Keller, H., The Story of My Life (New York: Grosset and Dunlap), 1904.

Lash, J. P., Helen and Teacher: The Story of Helen Keller and Anne Sullivan Macy (New York: Delacorte Press), 1980.

Lowenfeld, B., ed., The Visually Handicapped Child in School (New York: The John Day Co.), 1973.

Mack, C., "How Useful Is Braille?: Reports of Blind Adults," Journal of Visual Impairment and Blindness, 78 (7), 1984.

McIntire, J. C., "The Future Role of Residential Schools for Visually Impaired Students," Journal of Visual Impairment and Blindness, 79 (4), 1985.

Miller, W. H., "The Role of Residential Schools for the Blind in the Education of Visually Impaired Students," Journal of Visual Impairment and Blindness, 79 (4), 1985.

Moores, D. F. and Oden, C. W., "Educational Needs of Black Deaf Children," American Annuals of the Deaf, 122 (3), 1977.

Pritckett, H. T. and Hunt, J. T., "Education of the Deaf - The Next Ten Years," American Annuals of the Deaf, 122 (4), 1977.

Pritchard, D. G., Education and the Handicapped, 1760-1960 (London: Routledge and Kegan Paul), 1963.

Reese, K.M., ed., Teaching Chemistry to Physically Handicapped Students (The American Chemical Society), 1985.

Scholl, G.T., "The Education of Children with Visual Impairments," in Cruickshank and Johnson, op. cit., pp. 287-342.

Schwartz, H., Samuel Gridley Howe: Social Reformer, 1801-1876 (Cambridge: Harvard University Press), 1956.

Seltzer, R.J., "Chemistry Lab Adapted for Blind Students," Chemical and Engineering News, October 6, 1986, pp. 28-29.